

Applicants: Seo et al.
Serial No.: 10/534,521
Filing Date: May 11, 2005
Docket No.: 673-27 PCT/US
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IN THE CLAIMS:

The following listing of claims will replace all prior versions and listings of claims in the application:

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Currently Amended) A method for constructing an intermediate wall, having an upper fixing type structure, of a three arch excavated tunnel, in which lining concrete is cast and fixed to an upper side of the intermediate wall, a lower portion of the intermediate wall has a small thickness reduced as much as the thickness of the lining concrete, and the lower portion of the intermediate wall is one type selected from the group consisting of a column type, an arch

type and an intermediate wall type, the intermediate wall having the upper fixing type structure being one selected from the group consisting of a cast-in-place type intermediate wall, a steel plate girder type intermediate wall and a precast concrete type intermediate wall, the steel plate girder type or the precast concrete type intermediate wall has a drainage system in which a portion of the intermediate wall extending into a central tunnel of the three arch excavated tunnel is filled with a grouting agent without application of a waterproofing step, and an upper portion of the intermediate wall is drained such that water is induced toward side walls of the intermediate wall using a drain board and a waterproof layer and then sequentially flows toward the inside of the intermediate wall along a collection tank stopper, a collection tank and drain pipes.

11. (Canceled)

12. (Canceled)

13. (Currently Amended) The method as set forth in claim ~~11~~ 10, wherein the steel plate girder type intermediate wall has a drainage system in which the intermediate wall is formed to drain water drained such that water from the intermediate wall sequentially flows toward the outside of the intermediate wall along a collection tank stopper, a collection tank and drain pipes.

14. (Currently Amended) The method as set forth in claim ~~11~~ 10, wherein the cast-in-place type intermediate wall has a drainage system in which a cross section of the intermediate wall is locally reduced or cut forming openings so that water induced into the side surfaces of the cast-in-place type intermediate wall from the upper side of the cast-in-place type intermediate wall flows along the openings and then comes down the side surfaces.

15. (Currently Amended) The method as set forth in claim ~~4~~ 10, wherein a head of the intermediate wall is respectively fixed to the ground around a top portion of the intermediate wall ~~penetrating the extending into a central tunnel of the three arch excavated tunnel so that the intermediate wall has an effective structure, and designated portions of lock bolts having have~~ a length corresponding to a length ~~that~~ joints are exposed ~~in advance and then with respect to the head before the designated portions of the lock bolts are~~ buried into the head of the intermediate wall when the lock bolts are screwed into the top portion of the intermediate wall, the lock bolts fixing the intermediate wall to the ground around the top portion of the intermediate wall.

16. (Currently Amended) The method as set forth in claim ~~4~~ 10, wherein studs are installed in advance in a head of the steel plate girder type or the precast concrete type intermediate wall, concrete is cast into spaces formed by ~~exposing~~ lock bolts, which fix the intermediate wall to ground around a top portion of the intermediate wall, and the spaces are being filled with mortar and a milk grouting agent.

17. (Currently Amended) The method as set forth in claim ~~4~~ 10, wherein pipe holders and utility pipes are installed in the steel plate girder type or precast concrete type intermediate wall, thus allowing cables for communication and electric wires to pass through the intermediate wall.

18. (Canceled)

19. (New) A method for constructing an intermediate wall, having an upper fixing type structure, of a three arch excavated tunnel, in which lining concrete is cast and fixed to an upper side of the intermediate wall, a lower portion of the intermediate wall has a small thickness reduced as much as the thickness of the lining concrete, and the lower portion of the intermediate wall is one type selected from the group consisting of a column type, an arch type and an intermediate wall type, the intermediate wall having the upper fixing type structure is one

selected from the group consisting of a cast-in-place type intermediate wall, a steel plate girder type intermediate wall and a precast concrete type intermediate wall, the steel plate girder type intermediate wall has a drainage system in which the intermediate wall is formed to drain water such that water from the intermediate wall sequentially flows toward the outside of the intermediate wall along a collection tank stopper, a collection tank and drain pipes.

20. (New) The method as set forth in claim 19, wherein a head of the intermediate wall is respectively fixed to the ground around a top portion of the intermediate wall extending into a central tunnel of the three arch excavated tunnel, and designated portions of lock bolts have a length corresponding to a length that joints are exposed with respect to the head before the designated portions of the lock bolts are buried into the head of the intermediate wall when the lock bolts are screwed into the top portion of the intermediate wall, the lock bolts fixing the intermediate wall to the ground around the top portion of the intermediate wall.

21. (New) The method as set forth in claim 19, wherein studs are installed in advance in a head of the steel plate girder type or the precast concrete type intermediate wall, concrete is cast into spaces formed by lock bolts, which fix the intermediate wall to ground around a top portion of the intermediate wall, the spaces being filled with mortar and a milk grouting agent.

22. (New) The method as set forth in claim 19, wherein pipe holders and utility pipes are installed in the steel plate girder type or precast concrete type intermediate wall, thus allowing cables for communication and electric wires to pass through the intermediate wall.

23. (New) A method for constructing an intermediate wall, having an upper fixing type structure, of a three arch excavated tunnel, in which lining concrete is cast and fixed to an upper side of the intermediate wall, a lower portion of the intermediate wall has a small thickness reduced as much as the thickness of the lining concrete, and the lower portion of the intermediate wall is one type selected from the group consisting of a column type, an arch type and an

intermediate wall type, the intermediate wall having the upper fixing type structure is one selected from the group consisting of a cast-in-place type intermediate wall, a steel plate girder type intermediate wall and a precast concrete type intermediate wall, the cast-in-place type intermediate wall has a drainage system in which a cross section of the intermediate wall is locally reduced or cut forming openings so that water induced into the side surfaces of the cast-in-place type intermediate wall from the upper side of the cast-in-place type intermediate wall flows along the openings and down the side surfaces.

24. (New) The method as set forth in claim 22, wherein a head of the intermediate wall is respectively fixed to the ground around a top portion of the intermediate wall extending into a central tunnel of the three arch excavated tunnel, and designated portions of lock bolts have a length corresponding to a length that joints are exposed with respect to the head before the designated portions of the lock bolts are buried into the head of the intermediate wall when the lock bolts are screwed into the top portion of the intermediate wall, the lock bolts fixing the intermediate wall to the ground around the top portion of the intermediate wall.

25. (New) A method for constructing an intermediate wall, having an upper fixing type structure, of a three arch excavated tunnel, in which lining concrete is cast and fixed to an upper side of the intermediate wall, a lower portion of the intermediate wall has a small thickness reduced as much as the thickness of the lining concrete, and the lower portion of the intermediate wall is one type selected from the group consisting of a column type, an arch type and an intermediate wall type, the intermediate wall having the upper fixing type structure being one selected from the group consisting of a cast-in-place type intermediate wall, a steel plate girder type intermediate wall and a precast concrete type intermediate wall, a head of the intermediate wall is respectively fixed to the ground around a top portion of the intermediate wall extending into a central tunnel of the three arch excavated tunnel, and designated portions of lock bolts have a length corresponding to a length that joints are exposed with respect to the head before the designated portions of the lock bolts are buried into the head of the intermediate wall when

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the lock bolts are screwed into the top portion of the intermediate wall, the lock bolts fixing the intermediate wall to the ground around the top portion of the intermediate wall.

26. (New) A method for constructing an intermediate wall, having an upper fixing type structure, of a three arch excavated tunnel, in which lining concrete is cast and fixed to an upper side of the intermediate wall, a lower portion of the intermediate wall has a small thickness reduced as much as the thickness of the lining concrete, and the lower portion of the intermediate wall is one type selected from the group consisting of a column type, an arch type and an intermediate wall type, the intermediate wall having the upper fixing type structure being one selected from the group consisting of a cast-in-place type intermediate wall, a steel plate girder type intermediate wall and a precast concrete type intermediate wall, studs being installed in advance in a head of the steel plate girder type or the precast concrete type intermediate wall, concrete is cast into spaces formed by lock bolts, which fix the intermediate wall to ground around a top portion of the intermediate wall, the spaces being filled with mortar and a milk grouting agent.